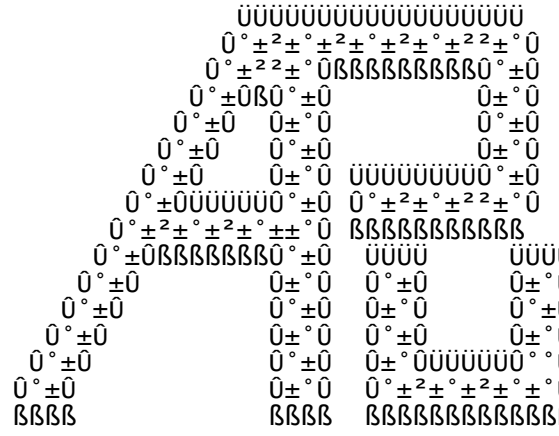
Alternative Lifestyles í Anarchist
Philosophies í Conspiracies
Destruction í Fiction í Freedom
Hacker Ethics í Hacking Tutorials
Hacking Utilities í Individualism
ú ÄÄÄ A N A R C H I S T ÄÄÄ ú
ú ÄÄÄ P H I L O S O P H E R S ÄÄÄ ú
ú ÄÄÄ U N I T E D ÄÄÄ ú
Paranormal Phenomena í Political
Opinions í Pranks í Religion
Scams/Frauds í Scanning Results
Security í Social Engineering
Telecommunications í Unix Support
VAX/VMS Support

Welcome to the fourth release by Anarchist Philosophers United. More than just the appearance of our philes has changed since the last release. We now have a new member, Falstaff. Falstaff is a hacker/phreaker with good experience and his first phile will be a beginner's guide to hacking Unix systems. He is also skilled at trashing and might be writing a phile about that in the future.

Virtuoso, a non-hacker but good programmer and anarchist has also joined. He plans to write a phile about his views of anarchy, and perhaps something about programming later on. Here is our member listing as of 26-02-95, in order of joining:

Sine ì Falstaff ì Virtuoso

As you can see we're still quite small. Hopefully now that we'll be able to produce more philes we'll be able to advertise better.

In the time since #003 was released, I have uploaded a file called APU-AD.ZIP. It contains a short ad explaining that we want new writers and what topics we're interested in. If you want to join APu and write about some of the topics listed in the logo above, or other relevant topics, please leave me a message on The Hayden Andre Project or Total Mayhem. (You'll get a much faster response if you leave it on THAP.)

Falstaff is also on THAP, and Virtuoso has recently applied, though we're not sure whether he's been validated yet. It may be tough, since while he is a whiz programmer he has only a rudimentary knowledge of H/P topics.

Here's a list of APu releases so far:

#	Title	Author	Date
001	A Simple Unix Decoy (DCOY)	Sine	05-02-95
002	Hacker Security (SAFE)	Sine	17-02-95
003	Political Correctness (RACE)	Sine	20-02-95
004	Young Hacker's Guide to X.25 Networks (X25)	Sine	27-02-95

The four-letter word in brackets refers to the filename it was released as. For example, (DCOY) would mean that the file is APU-DCOY.ZIP.

Upcoming from APu: I was originally planning phile #004 to be a guide to phone pranking, but I ran out of ideas. I have handed the partial phile to Falstaff, who plans to expand on it and release it as a co-authorship (perhaps with some ideas from Virtuoso about pranking restaurants). In the near future I plan to work on "The Anarchist Manifesto", which is a plan for a country based on my 'modified anarchy' system.

And now enough with the introduction, let's go on to the phile itself.

Keep on hacking,

úSine

-----BEGIN PGP PUBLIC KEY BLOCK-----
Version: 2.6

mQCNAy9GqwgAAAEEALk/hjSprZ0bsVCHZUCn1dE+w3FKtnEVJUgY9CkEOy6IpBve
hFFKeM4cSljYrHoDKgRRLLe5NZ4jEHLqdIHbThMQH0rVI/73YaXsVN/2Msk07PkD
yEzAKcqoLccSQrsNj3j/GQAUqY22tLBSbwyLb9gdFBVJfAeXh6tKuMCs+sFRAAUR
tCtTaW5lIG9mIEFuYXJjaGlzdCBQaGlsb3NvcGhlcnMgVW5pdGVkIDxBUHU+
=knAI
-----END PGP PUBLIC KEY BLOCK-----

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(or you could give it a shot yourself if you're having a lucky day).

The second way is to call from a private PAD. These are just like the PADs you call up by phone, but they are privately owned. In this case the PAD pays for all the calls you make. Private PADs are accessable from other systems, like Gandalf StarMasters or Unix and VMS systems with a PAD program running. These will almost certainly be passworded, so you will have to do some hacking to get in. (Unless you have friends, thanks for that StarMaster account Falstaff. ;))

Finding an NUI or private PAD is an accomplishment in itself, even though you can't use it for anything except accessing other systems. Many of the systems that don't accept collect calls seem to think this is adequate security, and therefore have very weak defenses once you get through the no-collect-call barrier.

³ Advantages of X.25 Networks

X.25 networks have long been one of the hacker community's favourite ways to access systems. There are several reasons why:

1. There are a lot of systems available to hack. From one local access number you will have access to hundreds of systems, all free of charge. Scan results of working addresses are easily obtainable on hacker boards everywhere. And since the networks are so widely used, you'll probably never get caught for scanning.

2. Systems on X.25 networks usually have quite lax security, especially if you're accessing them from a private PAD (see below). While working hard is part of hacking, we all love a free ride now and then.

3. Compared to other methods of system accessing, it's relatively safe. If a system you're on tries to trace you, they will have to go to the X.25 network first, then to your local indial, then to you. If you loop through a private PAD first, you'll be even more difficult to trace.

³ Disadvantages of X.25 Networks

There are a few downsides to X.25 hacking, however.

1. Because X.25 networks are so popular, many of the systems have been 'over-hacked.' Their security holes have been plugged, and intelligent, hacker-aware sysadmins have been hired.

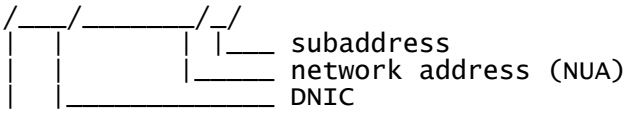
2. You won't find any 'important' systems on networks, i.e., no government or military computers. To access these you will probably have to dial them up by phone.

I think the disadvantages are quite minor compared to the advantages as far as a beginning hacker is concerned. You decide ...

³ X.25 Addresses

Each X.25 network has its own addressing system, but there is a standard system that all the major networks use. I'll explain the individual addressing systems later on when I describe each network in turn.

X.25 NUAs (Network User Addresses) follow this standard format:



|_____ pre-DNIC digit

The pre-DNIC digit is almost always a 0, but it is a 1 on Datapac. It is only necessary if you are including a DNIC after it, similar to dialing a 1 before making a long distance call. (It's long distance in the sense that you're connecting to another network.)

The four-digit DNIC (Data Network Identifier Code) is required when you are making calls outside your network. For example, if you are using Telenet (DNIC 3110) you do not need to include the DNIC unless you are calling an address outside 3110. A list of DNICs is printed near the end of this phile in Appendix 2.

The NUA is eight digits long, and is usually divided into a prefix and an actual address. On Telenet, the prefix is three digits and is the area code of the system you're calling. With Datapac, the prefix is four digits.

Subaddress or LCNs (Logical Channel Numbers) go from 01 to 99. Most of these subaddresses are unused, however. The letters A - Z can be used to substitute the first 26 subaddresses, for example 0311071400112A. This usually represents different access ports of the same general system.

³ Outdials

One of the most useful things you will connect to through an X.25 network is an outdial. Most outdials don't require passwords, and either give you direct access to the modem (meaning you have to dial through AT commands) or they prompt you for the number you want to dial.

You can't miss outdials, as they will almost certainly identify themselves as such. If they don't, simply type AT and you should get an OK shot back at you. Help is sometimes available using standard commands (HELP, H, ?, etc.).

Often the outdial will not reveal the area code it is in. With Telenet you will know from the prefix, but not with Datapac or other networks. Simply try a few numbers you know are in certain area codes and if they work you'll know what area code it serves. Keep a list of all the area codes you have outdials for, and only use PBX codes for everywhere else. The less you use PBX codes, the better.

If you are very lucky you will find a GOD, or Global Outdial. GOD is a fitting name, because once you have access to one you can dial long distance anywhere for free, and with much better security than using PBX codes. If you find one, you'd better become my friend *real quick*. ;)

³ Scanning X.25 Networks

Scanning X.25 addresses is much safer than scanning phone numbers, simply because the networks don't have the time or money to sort through the high volume of traffic to look for suspicious calling patterns. Only if you scan continuously for days on end will you likely raise eyebrows in the network's security department.

X.25 scanning is also much more productive than phone scanning. Depending on the network you're using, you should be able to find at least one system in twenty addresses, probably even more in the lower address ranges. In my area phone scanning nets me about one carrier in fifty numbers, and many of these require parity and emulation adjustments before I can do anything. X.25 packet-switching standardises all this.

Usually you don't need to take the security precaution of randomising your address list like many people do when phone scanning. Systems belonging to the same company will often be close together, so it is logical to scan in order.

Now on to my three favourite X.25 networks, Telenet (SprintNet), BT Tymnet, and Canada's own Datapac. If you thought everything in this phile so far was boring theory, here's your chance to get some practical knowledge.

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³ Telenet/SprintNet

Supposedly Tymnet is the largest network in the world, but if so Telenet (now called SprintNet, but I like the old name better) is a close second. Telenet by itself is very large, and if you include all the other networks accessable from it, it ends up larger than the Internet (gasp!).

My local Telenet dialup is (416)594-1121. To find out your dialup call 800-424-9494 (data). Press enter a few times until you get a TERMINAL= prompt. Here you can type vt100 if you have that or just enter again for dumb terminal mode. You will get an '@' prompt. Here you type 'c mail' or just 'mail'. At the username type 'phones' and type 'phones' again for the password. Hopefully you can navigate the following menu system. If you can't, read "PCs for Dummies" and then come back to this phile.

The procedure with the TERMINAL= prompt and all that is the same when you call your dialup and connect to your local PAD.

Telenet addresses are divided into a three-digit prefix that corresponds directly to the area code the system is in, and then a five-digit local NUA. If you want to type the full 13-digit address, go ahead, but Telenet makes things much simpler. To connect to the NUA 30300089, for example, you can type 303 89. This really speeds things up if you're scanning by hand (like all the Macho Real Men/Hackers do).

Scanning is easy because you'll know what prefixes are valid (they have to be valid area codes). As far as individual NUAs are concerned, the lower the range of numbers the more systems there will be. 0-150 will probably hold more systems than the entire 1000-2000 range.

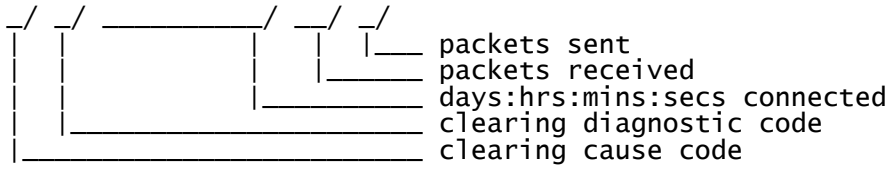
If you're doing a quick scan, you can probably stop around 300-400. But for a much better selection of systems, go to at least 1000. Some area codes will have run out of systems by then, while others might still be going strong.

Telenet also comes with a small collection of commands.

BYE/DISCONNECT/HANGUP	Logs out.
CONNECT/C	Supposed to be used before an address, but optional
DTAPE	Something to do with file transfers.
ENABLE/DISABLE ECHO	Sets local echo.
ENABLE/DISABLE FLOW	Sets flow control from PAD to host system
ENABLE/DISABLE TFLOW	Sets flow control from you to the PAD
FULL/HALF	Sets full/half duplex
ID <nui>	Sets the NUI
RESETS	Resets the port, as if you just logged in
RST/RST?	Show/set remote parameters
PAR?	Show ITI parameters
STATUS	Displays your network address and port
SET? <par>:<value>	Set ITI parameters (too big a list to print here)
TERM <type>	Set your terminal emulation (same as TERMINAL=)
TEST CHAR	Tests all Ascii characters (useless)
TEST ECHO	Echos what you type (again useless)
TEST TRIANGLE	Prints some sort of stupid triangle (still useless)
TEST VERSION	Displays information about your PAD's software

When you're calling systems on Telenet, and especially if you're scanning, you'll be repeatedly sent a DISCONNECTED message followed by a string of numbers. In case you're interested in why you were rudely given the boot, here is the format for that message:

```
 DISCONNECTED 00 00 00:00:00:00 000 00
```



If you are kicked off before the connection is fully established, you will only receive the cause and diagnostic codes, as none of the other information applies. Below is a list of cause codes. The list of diagnostic codes is much longer, and is printed at the near the end of this phile in Appendix 1.

0	DTE originated clear
1	Number busy
3	Invalid facility requested
5	Network congestion
9	Out of order
11	Access barred
13	Not obtainable
17	Remote Procedure Error
19	Local Procedure Error
21	RPOA out of order
25	Reverse Charge not Subscribed to
33	Incompatible destination
41	Fast Select acceptance not subscribed
49	Ship absent
128	DTE originated with top bit set
193	Gateway procedural error
195	Gateway congestion
199	Gateway Operational

³ BT Tymnet

I haven't spent much time on Tymnet because of its tough(er) security measures. However, since it is the largest X.25 network in the world, it just wouldn't be right to not include it in this phile.

To find your local dialup call customer service (voice) at 1-800-336-0149, probably between 8:30 and 17:00 EST. Or you can look in the phone book under Tymnet or BT Tymnet, or call directory assistance. Once you are on a Tymnet system you can type INFORMATION for a list of dialups and other useful things.

When you connect to Tymnet you will get some garbage or perhaps nothing at all. Hitting enter a few times will give you a "please type your terminal identifier" prompt. Entering 'a' here should set your emulation properly.

You will now see the prompt "please log in:", where you can finally enter NUAs. Try mnemonic ones like "access", "console", or "system". If you want to use number-format NUAs to reach the other addresses, though, you will need an NUI. You just need to keep guessing, and guessing, and guessing.

Tymnet, as a security measure, will log you out after you make three mistakes of any kind. It will take a lot of guessing before you find a valid NUI. And what do you get after all this brute-forcing? The ability to hack other systems. The Tymnet system itself is of little interest.

It's hard enough hacking actual systems, I don't want to spend my time brute-forcing something that won't give me anything to explore right away. For these reasons, I don't like Tymnet much. But to each his own ...

³ Datapac

Datapac is Canada's own X.25 network, an old giant that grows every day, yet has changed little security-wise over the years. Its lax security

makes it the ideal ground for new (and nostalgic) hackers.

My local dialup is (416)979-1619. You can look in the phone book under "Datapac Public Dial Port" for your local number. Once you call it you will see nothing. Type three dots and press enter. This will tell Datapac to initialise the port. (Though I've found that just pressing enter a few times works as well.) You will see 'DATAPAC : XXXX XXXX' where the X's represent your dialup's NUA.

You are now ready to enter Datapac addresses. These are eight digits, but can go up to ten when subaddressing is used. Datapac NUAs are divided into a four-digit prefix and a four-digit address. The prefixes do not correspond to area codes, but numbers close to each other are usually in the same general (geographic) area.

As with Telenet, addresses are much more dense in the lower ranges. When scanning you should first test out a prefix by scanning the first 50-100 addresses, and if it works continue on to 1000 or even higher.

Conclusion

X.25 networks provide ideal gateways for hackers of all levels of experience. They are relatively safe and provide access to thousands of systems around the world.

Now stop reading this and GET HACKING!

See you all in our next release ...

úSine

Appendix 1: Clear Diagnostic Codes

0	"No additional Information"
1	"Invalid Ps"
2	"Invalid Pr"
16	"Packet Type Invalid"
17	"Packet Type Invalid in state r1"
18	"Packet Type Invalid in state r2"
19	"Packet Type Invalid in state r3"
20	"Packet Type Invalid in state p1"
21	"Packet Type Invalid in state p2"
22	"Packet Type Invalid in state p3"
23	"Packet Type Invalid in state p4"
24	"Packet Type Invalid in state p5"
25	"Packet Type Invalid in state p6"
26	"Packet Type Invalid in state p7"
27	"Packet Type Invalid in state d1"
28	"Packet Type Invalid in state d2"
29	"Packet Type Invalid in state d3"
32	"Packet not allowed"
33	"Packet Type Unidentifiable"
34	"Call on One way LC"
35	"Invalid PVC packet type"
36	"Packet on Unassigned logical channel"
37	"Reject not Subscribed to"
38	"Packet too short"
39	"Packet too long"
40	"Invalid GFI"
41	"Restart/Registration Packet has LC"
42	"Packet type not compatible with Facility"
43	"Unauthorised Interrupt Confirmation"
44	"Unauthorised Interrupt"
45	"Unauthorised Reject"
48	"Timer expired"
49	"Timer expired for Incoming call"

```
 50  "Timer expired for clear Indication"
 51  "Timer expired for reset indication"
 52  "Timer expired for restart indication"
 53  "Timer expired for call forwarding"
 64  "Call set up/clear/registration problem"
 65  "Facility/registration code not allowed"
 66  "Facility parameter not allowed"
 67  "Invalid Called Address"
 68  "Invalid calling address"
 69  "Invalid facility registration length"
 70  "Incoming call barred"
 71  "No logical channel available"
 72  "Call Collision"
 73  "Duplicate facility ested"
 74  "Non zero address length"
 75  "Non zero facility length"
 76  "Facility not provided when expected"
 77  "Invalid CCITT spec'd facility"
 78  "Maximum call redirections/forwardings exceeded"
 80  "Miscellaneous"
 81  "Improper cause code from DTE"
 82  "Non alligned octet"
 83  "Inconsistent Q bit setting"
 84  "NUI Related problem"
 96  "International setup/clearing problem"
 97  "Unknown calling DNIC "
 98  "TNIC mismatch "
 99  "Call identifier mismatch"
100 "Neg' error in utility parm' value"
101 "Invalid utility length "
102 "Non-zero utility length "
103 "M bit violation "
112 "International problem "
113 "Remote Network problem "
114 "International Protocol problem "
115 "International Link out of order "
116 "International Link busy"
117 "Transit Network Facility Problem"
118 "Remote Network Facility Problem"
119 "International routing problem"
120 "Temporary routing problem"
121 "Unknown called DNIC"
122 "MAintenance action"
128 "Network Specific Diagnostic"
218 "trax_trap error for user call"
219 "user task error"
220 "x25 task error"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³ Appendix 2: DNIC List

 This DNIC list was borrowed from The Neophyte's Guide to Hacking by
 Deicide. The guide provides some good basic information as well as
 reference material on common accounts and services. It is an excellent
 phile to have around.

 COUNTRY               NETWORK          DNIC       DIRECTION
 -------               -------          ----       ---------

 ANDORRA               ANDORPAC         2945       BI-DIR
 ANTIGUA               AGANET           3443       INCOMING
 ARGENTINA             ARPAC            7220       BI-DIR
                       ARPAC            7222       BI-DIR
 AUSTRIA               DATEX-P          2322       BI-DIR
                       DATEX-P TTX      2323       BI-DIR
                       RA               2329       BI-DIR
 AUSTRALIA             AUSTPAC          5052       BI-DIR
                       OTC DATA ACCESS  5053       BI-DIR
 AZORES                TELEPAC          2680       BI-DIR
```

BAHAMAS	BATELCO	3640	BI-DIR
BAHRAIN	BAHNET	4263	BI-DIR
BARBADOS	IDAS	3423	BI-DIR
BELGIUM	DCS	2062	BI-DIR
	DCS	2068	BI-DIR
	DCS	2069	BI-DIR
BELIZE	BTLDATAPAC	7020	BI-DIR
BERMUDA	BERMUDANET	3503	BI-DIR
BRAZIL	INTERDATA	7240	BI-DIR
	RENPAC	7241	BI-DIR
	RENPAC	7248	INCOMING
	RENPAC	7249	INCOMING
BULGARIA	BULPAC	2841	BI-DIR
BURKINA FASO	BURKIPAC	6132	BI-DIR
CAMEROON	CAMPAC	6242	BI-DIR
CANADA	DATAPAC	3020	BI-DIR
	GLOBEDAT	3025	BI-DIR
	CNCP PACKET NET	3028	BI-DIR
	CNCP INFO SWITCH	3029	BI-DIR
CAYMAN ISLANDS	IDAS	3463	BI-DIR
CHAD	CHADPAC	6222	BI-DIR
CHILE	ENTEL	7302	BI-DIR
	CHILE-PAC	7303	INCOMING
	VTRNET	7305	BI-DIR
	ENTEL	7300	INCOMING
CHINA	PTELCOM	4600	BI-DIR
COLOMBIA	COLDAPAQ	7322	BI-DIR
COSTA RICA	RACSAPAC	7120	BI-DIR
	RACSAPAC	7122	BI-DIR
	RACSAPAC	7128	BI-DIR
	RACSAPAC	7129	BI-DIR
CUBA	CUBA	2329	BI-DIR
CURACAO	DATANET-1	3621	BI-DIR
CYPRUS	CYTAPAC	2802	BI-DIR
	CYTAPAC	2807	BI-DIR
	CYTAPAC	2808	BI-DIR
	CYTAPAC	2809	BI-DIR
DENMARK	DATAPAK	2382	BI-DIR
	DATAPAK	2383	BI-DIR
DJIBOUTI	STIPAC	6382	BI-DIR
DOMINICAN REP.	UDTS-I	3701	INCOMING
EGYPT	ARENTO	6020	BI-DIR
ESTONIA	ESTPAC	2506	BI-DIR
FIJI	FIJIPAC	5420	BI-DIR
FINLAND	DATAPAK	2441	BI-DIR
	DATAPAK	2442	BI-DIR
	DIGIPAK	2443	BI-DIR
FRANCE	TRANSPAC	2080	BI-DIR
	NTI	2081	BI-DIR
	TRANSPAC	2089	BI-DIR
	TRANSPAC	9330	INCOMING
	TRANSPAC	9331	INCOMING
	TRANSPAC	9332	INCOMING
	TRANSPAC	9333	INCOMING
	TRANSPAC	9334	INCOMING
	TRANSPAC	9335	INCOMING
	TRANSPAC	9336	INCOMING
	TRANSPAC	9337	INCOMING
	TRANSPAC	9338	INCOMING
	TRANSPAC	9339	INCOMING
FR ANTILLIES	TRANSPAC	2080	BI-DIR
FR GUIANA	TRANSPAC	2080	BI-DIR
FR POLYNESIA	TOMPAC	5470	BI-DIR
GABON	GABONPAC	6282	BI-DIR
GERMANY F.R.	DATEX-P	2624	BI-DIR
	DATEX-C	2627	BI-DIR
GREECE	HELPAK	2022	BI-DIR
	HELLASPAC	2023	BI-DIR
GREENLAND	KANUPAX	2901	BI-DIR
GUAM	LSDS-RCA	5350	BI-DIR

	PACNET	5351	BI-DIR
GUATEMALA	GUATEL	7040	INCOMING
	GUATEL	7043	INCOMING
HONDURAS	HONDUTEL	7080	INCOMING
	HONDUTEL	7082	BI-DIR
	HONDUTEL	7089	BI-DIR
HONG KONG	INTELPAK	4542	BI-DIR
	DATAPAK	4545	BI-DIR
	INET HK	4546	BI-DIR
HUNGARY	DATEX-P	2160	BI-DIR
	DATEX-P	2161	BI-DIR
ICELAND	ICEPAK	2740	BI-DIR
INDIA	GPSS	4042	BI-DIR
	RABMN	4041	BI-DIR
	I-NET	4043	BI-DIR
INDONESIA	SKDP	5101	BI-DIR
IRELAND	EIRPAC	2721	BI-DIR
	EIRPAC	2724	BI-DIR
ISRAEL	ISRANET	4251	BI-DIR
ITALY	DARDO	2222	BI-DIR
	ITAPAC	2227	BI-DIR
IVORY COAST	SYTRANPAC	6122	BI-DIR
JAMAICA	JAMINTEL	3380	INCOMING
JAPAN	GLOBALNET	4400	BI-DIR
	DDX	4401	BI-DIR
	NIS-NET	4406	BI-DIR
	VENUS-P	4408	BI-DIR
	VENUS-P	9955	INCOMIMG
	VENUS-C	4409	BI-DIR
	NI+CI	4410	BI-DIR
KENYA	KENPAC	6390	BI-DIR
KOREA REP	HINET-P	4500	BI-DIR
	DACOM-NET	4501	BI-DIR
	DNS	4503	BI-DIR
KUWAIT	BAHNET	4263	BI-DIR
LEBANON	SODETEL	4155	BI-DIR
LIECHTENSTEIN	TELEPAC	2284	BI-DIR
	TELEPAC	2289	BI-DIR
LUXEMBOURG	LUXPAC	2704	BI-DIR
	LUXPAC	2709	BI-DIR
MACAU	MACAUPAC	4550	BI-DIR
MADAGASCAR	INFOPAC	6460	BI-DIR
MADEIRA	TELEPAC	2680	BI-DIR
MALAYSIA	MAYPAC	5021	BI-DIR
MAURITIUS	MAURIDATA	6170	BI-DIR
MEXICO	TELEPAC	3340	BI-DIR
MOROCCO	MOROCCO	6040	BI-DIR
MOZAMBIQUE	COMPAC	6435	BI-DIR
NETHERLANDS	DATANET-1	2040	BI-DIR
	DATANET-1	2041	BI-DIR
	DABAS	2044	BI-DIR
	DATANET-1	2049	BI-DIR
N. MARIANAS	PACNET	5351	BI-DIR
NEW CALEDONIA	TOMPAC	5460	BI-DIR
NEW ZEALAND	PACNET	5301	BI-DIR
NIGER	NIGERPAC	6142	BI-DIR
NORWAY	DATAPAC TTX	2421	BI-DIR
	DATAPAK	2422	BI-DIR
	DATAPAC	2423	BI-DIR
PAKISTAN	PSDS	4100	BI-DIR
PANAMA	INTELPAQ	7141	BI-DIR
	INTELPAQ	7142	BI-DIR
PAPUA-NEW GUINEA	PANGPAC	5053	BI-DIR
PARAGUAY	ANTELPAC	7447	BI-DIR
PERU	DICOTEL	7160	BI-DIR
PHILIPPINES	CAPWIRE	5150	INCOMING
	CAPWIRE	5151	BI-DIR
	PGC	5152	BI-DIR
	GLOBENET	5154	BI-DIR
	ETPI	5156	BI-DIR

POLAND	POLAK	2601	BI-DIR
PORTUGAL	TELEPAC	2680	BI-DIR
	SABD	2682	BI-DIR
PUERTO RICO	UDTS	3300	BI-DIR
	UDTS	3301	BI-DIR
QATAR	DOHPAC	4271	BI-DIR
REUNION (FR)	TRANSPAC	2080	BI-DIR
RWANDA	RWANDA	6352	BI-DIR
SAN MARINO	X-NET	2922	BI-DIR
SAUDI ARABIA	ALWASEED	4201	BI-DIR
SENEGAL	SENPAC	6081	BI-DIR
SEYCHELLES	INFOLINK	6331	BI-DIR
SINGAPORE	TELEPAC	5252	BI-DIR
	TELEPAC	5258	BI-DIR
SOLOMON ISLANDS	DATANET	5400	BI-DIR
SOUTH AFRICA	SAPONET	6550	BI-DIR
	SAPONET	6551	BI-DIR
	SAPONET	6559	BI-DIR
SPAIN	TIDA	2141	BI-DIR
	IBERPAC	2145	BI-DIR
SRI-LANKA	DATANET	4132	BI-DIR
SWEDEN	DATAPAK TTX	2401	BI-DIR
	DATAPAK-2	2403	BI-DIR
	DATAPAK-2	2407	BI-DIR
SWITZERLAND	TELEPAC	2284	BI-DIR
	TELEPAC	2285	BI-DIR
	TELEPAC	2289	BI-DIR
TAIWAN	PACNET	4872	BI-DIR
	PACNET	4873	BI-DIR
	UDAS	4877	BI-DIR
TCHECOSLOVAKA	DATEX-P	2301	BI-DIR
THAILAND	THAIPAC	5200	BI-DIR
	IDAR	5201	BI-DIR
TONGA	DATAPAK	5390	BI-DIR
TOGOLESE REP.	TOGOPAC	6152	BI-DIR
TORTOLA	IDAS	3483	INCOMING
TRINIDAD	DATANETT	3745	BI-DIR
	TEXTET	3740	BI-DIR
TUNISIA	RED25	6050	BI-DIR
TURKEY	TURPAC	2862	BI-DIR
	TURPAC	2863	BI-DIR
TURKS&CAICOS	IDAS	3763	INCOMING
U ARAB EMIRATES	EMDAN	4241	BI-DIR
	EMDAN	4243	BI-DIR
	TEDAS	4310	INCOMING
URUGUAY	URUPAC	7482	BI-DIR
	URUPAC	7489	BI-DIR
USSR	IASNET	2502	BI-DIR
U.S.A.	WESTERN UNION	3101	BI-DIR
	MCI	3102	BI-DIR
	ITT/UDTS	3103	BI-DIR
	WUI	3104	BI-DIR
	BT-TYMNET	3106	BI-DIR
	SPRINTNET	3110	BI-DIR
	RCA	3113	BI-DIR
	WESTERN UNION	3114	BI-DIR
	DATAPAK	3119	BI-DIR
	PSTS	3124	BI-DIR
	UNINET	3125	BI-DIR
	ADP AUTONET	3126	BI-DIR
	COMPUSERVE	3132	BI-DIR
	AT&T ACCUNET	3134	BI-DIR
	FEDEX	3138	BI-DIR
	NET EXPRESS	3139	BI-DIR
	SNET	3140	BI-DIR
	BELL SOUTH	3142	BI-DIR
	BELL SOUTH	3143	BI-DIR
	NYNEX	3144	BI-DIR
	PACIFIC BELL	3145	BI-DIR
	SWEST BELL	3146	BI-DIR

	U.S. WEST	3147	BI-DIR
	CENTEL	3148	BI-DIR
	FEDEX	3150	BI-DIR
U.S. VIRGIN I	UDTS	3320	BI-DIR
U. KINGDOM	IPSS-BTI	2341	BI-DIR
	PSS-BT	2342	BI-DIR
	GNS-BT	2343	BI-DIR
	MERCURY	2350	BI-DIR
	MERCURY	2351	BI-DIR
	HULL	2352	BI-DIR
VANUATU	VIAPAC	5410	BI-DIR
VENEZUELA	VENEXPAQ	7342	BI-DIR
YUGOSLAVIA	YUGOPAC	2201	BI-DIR
ZIMBABWE	ZIMNET	6484	BI-DIR

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